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(56) Documents Cited
GB 2032269 A GB 1574888 A GB 1334935 A
GB 0594326 A WO 97/11625 A1 US 5416935 A
US 5405370 A US 3798686 A

(58) Field of Search
UK CL (Edition P) **A4G , A4M , A5R REHT**
INT CL^6 **A47C 21/04 , A47G 9/02 9/08 , A61F 7/00 7/02 7/08**
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(54) Abstract Title
Variable temperature airflow mat

(57) A mat is disclosed which provides a flow of air at variable temperature to a user. The mat may comprise an air-impermeable bottom section 1, an upper section 4 having a plurality of holes, and an array of flexible plastic tubing 2 therebetween which may include a number of spaced apart holes. Typically, the air supply to the mat is provided by way of a hose feed (5, Fig. 1) connected to a fan and heater unit (6, Fig. 1), which may, in turn, be powered by a battery or mains supply and regulated by a hand control set (7, Fig. 1). The mat may be incorporated into a mattress or a sleeping bag and may be used to treat certain skin conditions, wherein the body temperature of the user can be adjusted to reduce excessive perspiration.

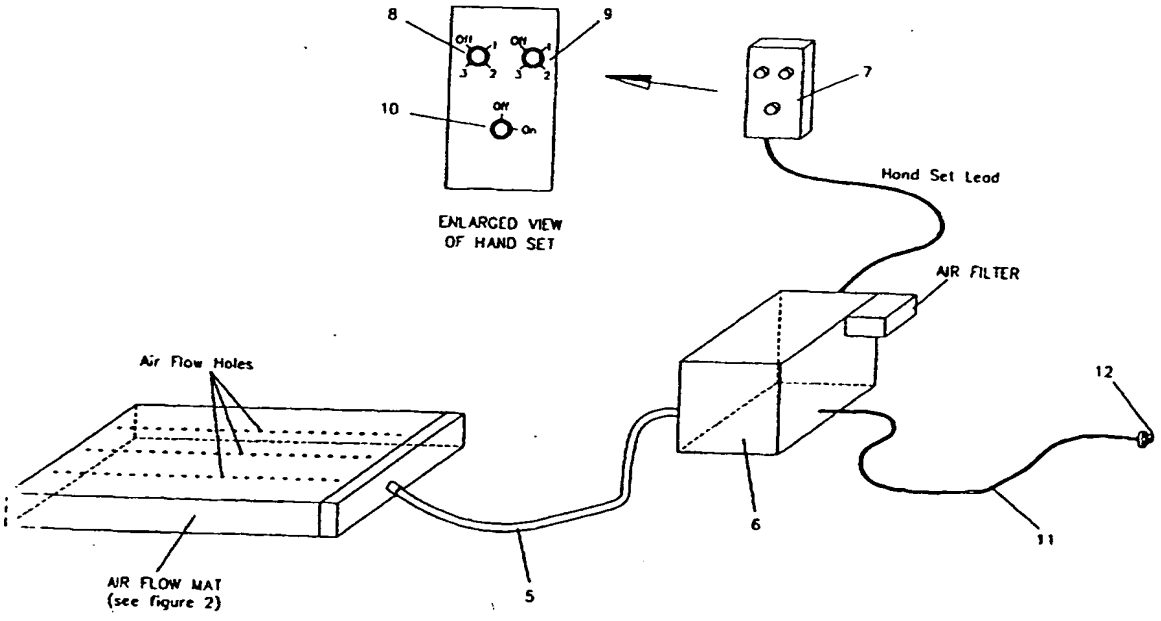

FIGURE 1

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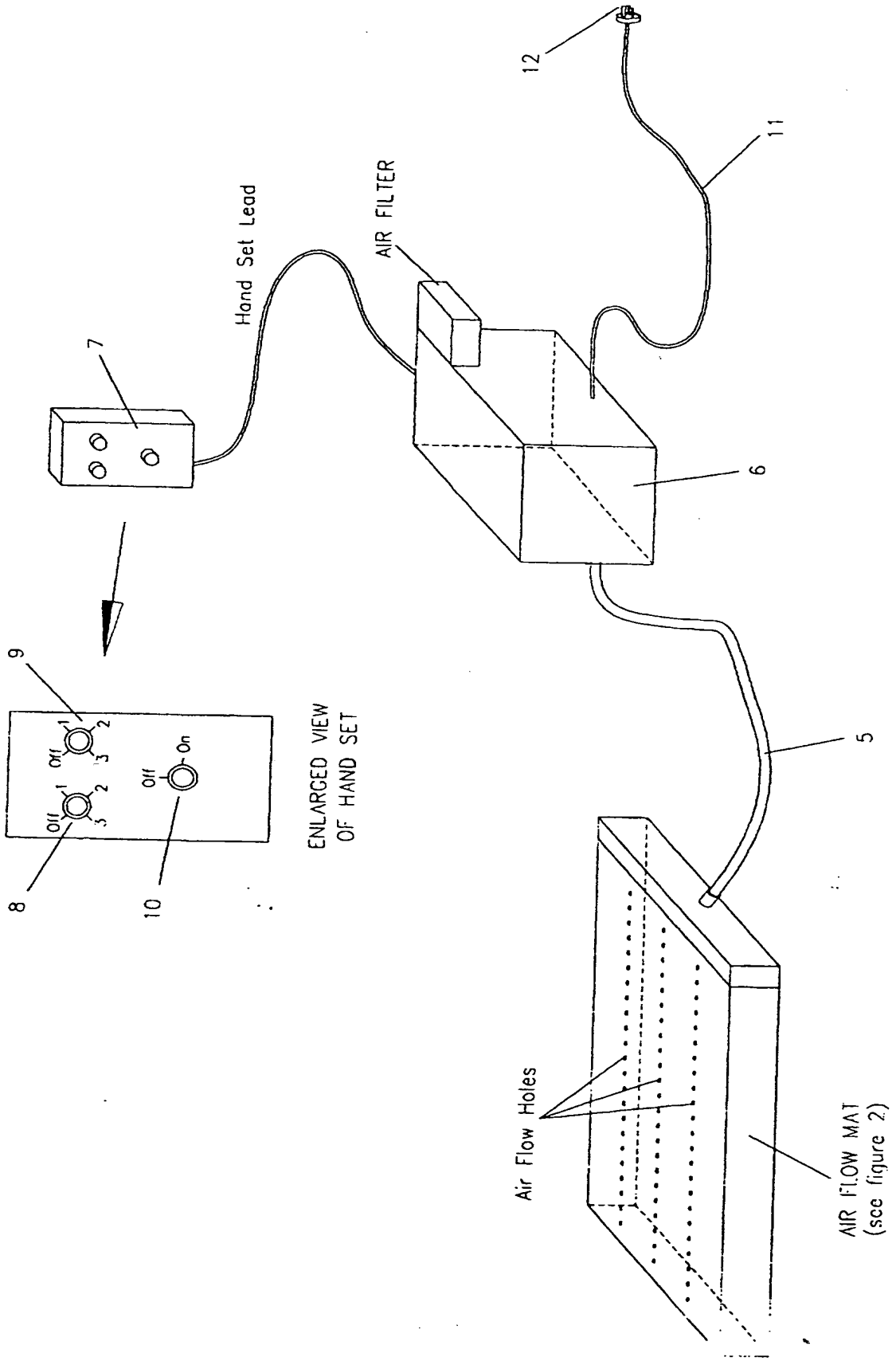
12
11
Hand Set Lead
AIR FILTER
7
6
9
Off
1
2
3
On
8
10
ENLARGED VIEW
OF HAND SET
5
Air Flow Holes
AIR FLOW MAT
(see figure 2)

FIGURE 1

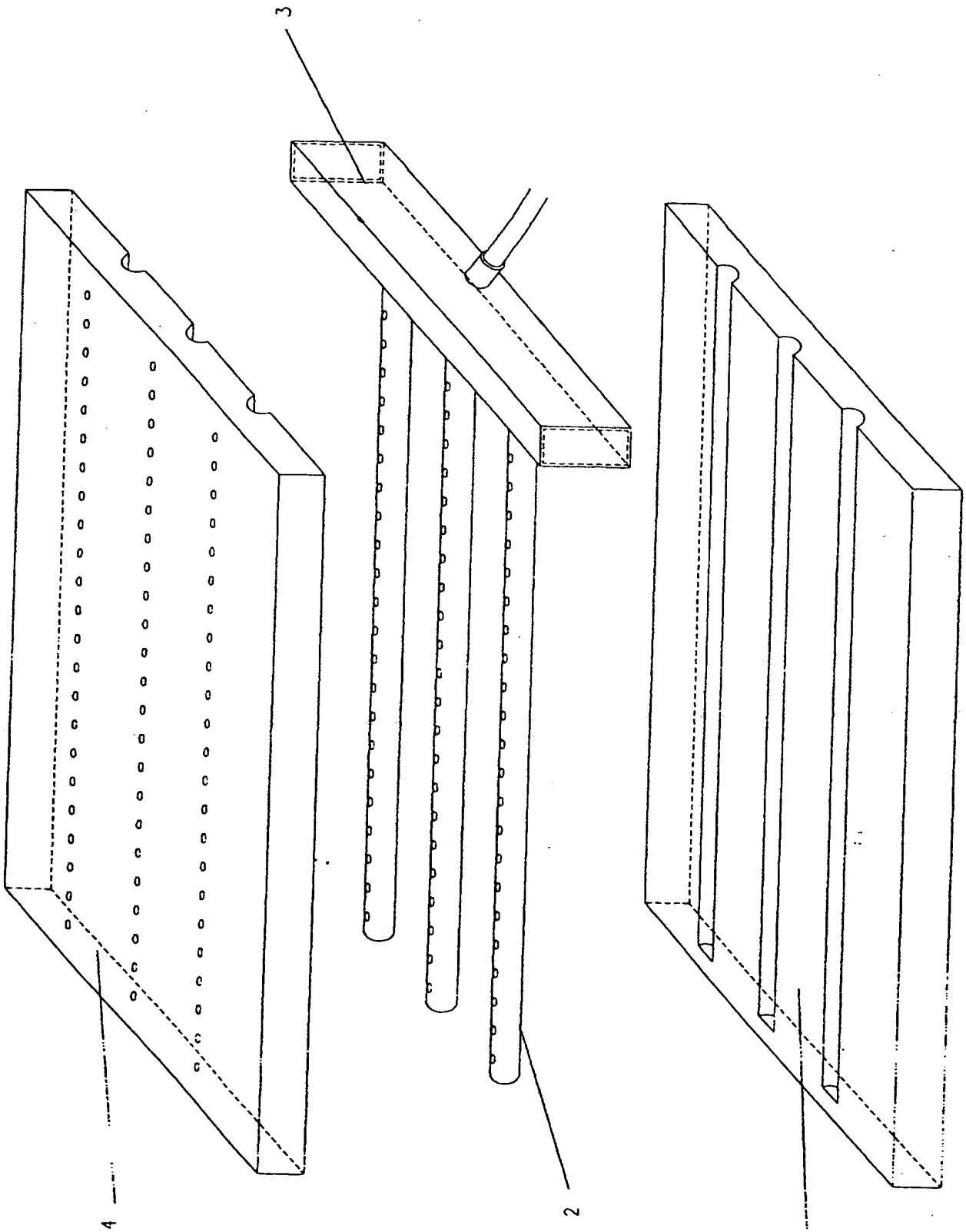

FIGURE 2

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VARIABLE TEMPERATURE AIRFLOW MAT

This invention relates to a variable cool or hot air mat.

The mat is the main part of the invention for it's use.

The air mat is placed under a mattress allowing hot or cool air to flow through the mat and out the top of the mat, then through the bottom of the mattress, through the mattress then through the top of the mattress.
To allow for the air to pass through the mattress and up through the top, the sides of the mattress must be sealed with an adhesive polythene around the sides of the mattress, thus enabling it's user to benefit more from hot or cool air flow.

The mat can also be incorporated into a mattress.

The mat can also be incorporated into a sleeping bag for other uses, such as camping.
The supply of hot or cool air from the power unit can be supplied by mains AC or battery DC.

The benefits of the air mat can be applied to situations of cold whereby the mat would supply hot airflow to it's user, and also situations of extreme high temperature whereby the mat would supply cool airflow to it's user, hence deterring any excessive perspiration experienced by coming into contact with the mattress.

A large percentage of the mattresses in everyday use could benefit from the airmat's application. Obviously, a small percentage of mattresses, could not support the air mat's application.

A particular embodiment of the invention will now be described by way of example, with reference to the accompanying drawings:

Referring to Figure 1 the drawing comprises of;
The air hose feed 5, to the air mat is connected to the fan and heater unit 6, which in turn is controlled by means of a hand control set 7, comprising of a variable airflow control 8, a heat element control 9, and an on/off trip switch 10, which relays back to the fan and heater unit 6, for safety purposes, (it may be noted that the hand control set 7, may be fitted with a timer for more precise purposes). The aforementioned is all connected to a mains cable 11, which in turn plugs into the main electricity supply 12 or (for camping purposes) into a battery supply.
Referring to Figure 2, the drawing comprises of;
a sectional airflow mat which consists of 4 separate parts - bottom section of foam mat 1, which allows no air through. Section of flexible plastic tubing 2, encorporating holes at intervals which are fed into the box section for airflow 3. The top part of the mat 4, has indentations to sit upon the flexible plastic tubing exactly and has proportionate holes enlined with those in the flexible plastic tubing 2. When sealed together this all forms one mat.

For use in sleeping bag applications a timer can be incorporated to activate the fan and heater unit at regular intervals thereby enabling it's user to maintain body temperature. It should be noted that using the battery in this way would also enable the unit to be used throughout the night.

The Variable Temperature Airflow mat would be of equal length and width depending upon the size of the mattress being used, or, for purposes such as camping, depending upon the size of the sleeping bag.

Obviously the Variable Temperature Airflow Mat would be of less thickness than the drawings illustrate.
The fan and heater unit, as illustrated in Figure 1, would obviously be constructed to be as unobtrusive a size as possible.

SAFETY AND OTHER ASPECTS:

The airflow mat can be safely kept on continuously.
Non conductive mat and air hose.
No contact with any electrics within the bed.
Heat produced rapidly once activated.
Cool air circulation facility.
Rapid coolature of air from hot to cool if required.
Fully portable appliance (unless incorporated into a mattress).

CLAIMS

1 The Variable Temperature Airflow Mat provides either hot or cool airflow to it's user depending upon requirements.

2 The Airflow Mat can also be incorporated into a mattress.

3 The Airflow Mat can also be incorporated into a sleeping bag for other uses, such as camping.

4 The unit can be applied to either AC mains or DC battery use depending upon which is required.

5 The Airflow Mat can also be utilised for certain skin irritations whereby it's user can benefit from a more comfortable body temperature to deter excessive perspiration and discomfort.

The Patent Office

5

Application No:	GB 9800923.6	**Examiner:**	Dr Paul R Minton
Claims searched:	1-5	**Date of search:**	30 March 1998

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.6): A47C 21/04; A47G 9/02, 9/08; A61F 7/00, 7/02, 7/08.

Other: ONLINE: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X, Y	GB 2 032 269 A	(NG). See particularly lines 106-110, page 1 and Figure 3.	X: 1,2,4 Y: 3
X, Y	GB 1 574 888 A	(GUPPY). See particularly lines 9-12, page 1 and Figure 1.	X: 1,2,4 Y: 3
X, Y	GB 1 334 935 A	(HOWARTH). See particularly lines 20-38, page 1 and Figure 1.	X: 1,2,4,5 Y: 3
X, Y	GB 0 594 326 A	(BOYD). See particularly Abstract and Figure 1.	X: 1,2,4 Y: 3
X, Y	WO 97/11625 A1	(ARMSTRONG *et al*). See particularly lines 13-15, page 4, lines 11-13 & 25-26, page 5, lines 6-7, page 6 and Figure 3.	X: 1,2,4,5 Y: 3
X, Y	US 5 416 935 A	(NIEH). See particularly lines 27-37, column 2 and Figure 2.	X: 1,2,4 Y: 3
X	US 5 405 370 A	(IRANI). See particularly lines 12-15, column 1 and Figure 1.	1,3,4
Y	US 3 798 686 A	(GAISER) See particularly Abstract and Figure 1.	3

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.